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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,716

06/05/2006

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EXAMINER

WU, SHEAN CHIU

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,716	CHERKAOUI ET AL.	
	Examiner	Art Unit	
	Shean C. Wu	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 and 36-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 22 and 24-35 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/5/06 and 8/7/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election with traverse of electing additive No.1 on page 41 in the reply filed on 2/2/09 is acknowledged. The elected species reads on claims 21-35. The traversal is on the ground that claims 36-44 is the method of using a polymeric mesogenic mixtures (claims 1-20), which comprises a chiral or achiral rod shape compound (claims 21-35). This is not found persuasive because the compound, mesogenic mixture and the method of using a mesogenic mixture are patent distinct.

Inventions Group I (claims 1-20) and Group II (claims 21-36) are directed to related a compound and mixture comprising thereof. The related inventions are distinct if: (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed are not obvious variants. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

Inventions Group I (claims 1-20) and Group III (claims 36-44) are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the process for using the products as claimed can be practiced with another materially different product.

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Inventions Group II (claims 21-35) and Group III (claims 36-44) are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the process for using the products as claimed can be practiced with another materially different product.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-20 and 36-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 2/2/09.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

4. The disclosure is objected to because of the following informalities:

On page 56 in the specification, the chemical structure is incomplete.

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Appropriate correction is required.

Claim Objections

5. Claims 23-34 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. Also, claims 25-35 are objected because they are dependent claims.

Claim Rejections - 35 USC § 102

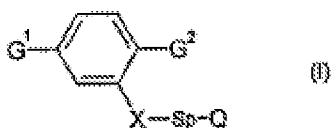
6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 21-22 and 24-35 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 0048985 or US 6,676,851.

The reference discloses a novel liquid crystal compound represented by formula



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wherein

G^1 and G^2 independently represent a polymerisable mesogenic residue;

X represents a group selected from $-\text{CH}_2-$, $-\text{O}-$, $-\text{CO}-$, $-\text{COO}-$, $-\text{OOC}-$, $-\text{CONR}'-$, $-\text{OCONR}'-$, $-\text{OCONR}'-$;

Sp represents a group of the formula $-(\text{CH}_2)_p-$ in which p is an integer of 1 to 18 and in which one or two non adjacent $-\text{CH}_2-$ groups are optionally replaced by $-\text{CH}=\text{CH}-$; or in which one or two $-\text{CH}_2-$ groups are optionally replaced by one or two groups selected from the group consisting $-\text{O}-$, $-\text{CO}-$, $-\text{COO}-$, $-\text{OOC}-$, $-\text{CONR}'-$, $-\text{OCONR}'-$, $-\text{OCONR}'-$ with the proviso that firstly the spacer group does not contain two adjacent heteroatoms and secondly when X is $-\text{CH}_2-$, p can also have a value of 0;

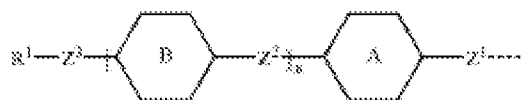
Q represents a polar group selected from $-\text{CN}$, $-\text{COR}$, $-\text{COOR}$, $-\text{OCOR}$, $-\text{CONR}'\text{R}$, $-\text{NR}'\text{COR}$, $-\text{OCONR}'\text{R}$, $-\text{NR}'\text{COOR}$, F, Cl, $-\text{CF}_3$, $-\text{OCF}_3$ or $-\text{OR}$ or a cyclic group which is unsubstituted or optionally substituted by a group selected from a lower alkyl, lower alkenyl, lower alkoxy, lower alkenyloxy, halogen, $-\text{CN}$, $-\text{COR}''$, $-\text{COOR}''$, $-\text{OCOR}''$, $-\text{CONR}'\text{R}''$, $-\text{NR}'\text{COR}''$, $-\text{OCONR}'\text{R}''$, $-\text{NR}'\text{COOR}''$, $-\text{CF}_3$, and $-\text{OCF}_3$; where

R represents hydrogen, a lower alkyl, a lower alkenyl or a cyclic group as defined above; and

R' is hydrogen, a lower alkyl or a lower alkenyl group

R'' represents a lower alkyl or a lower alkenyl group.

Preferably the polymerisable mesogenic residues G^1 and G^2 are each independently represented by the group of formula II



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wherein

A and B are independently selected from the group consisting of 1,4-phenylene, pyridine-2,5-diyl, pyrimidine-2,5-diyl, trans-1,4-cyclohexylene and trans-1,3-dioxane-1,4-diyl; optionally substituted with a halogen, —CN, a lower alkyl, lower alkenyl, lower alkoxy or lower alkenyloxy group;

n is 1 or 0,

Z^1 and Z^2 are independently selected from the group consisting a single bond, —COO—, —OOC—, —CH₂—CH₂—, —CH₂O—, —OCH₂—, —CH=CH—, —C≡C—, —(CH₂)₄—, or —(CH₂)₅O—;

Z^3 represents a group of formula —(CH₂)_pX— in which p is an integer having a value of 1 to 18 and X is defined above, and in which one or two non adjacent —CH₂— groups may be optionally replaced by —CH=CH— or in which one or two —CH₂— groups may be replaced by one or two additional linking groups X with the proviso that firstly the group Z^3 does not contain two adjacent heteroatoms and secondly when X is —CH₂, p can also have a value of 0

R^1 represents a polymerisable group selected from the group consisting of CH₂=C(Pb)—, CH₂=CW—COO—, CH₂=CH—COO—Ph, CH₂=CW—CO—NH—, CH₂=CH—O—, CH₂=CH—OOC—, Ph—CH=CH—, CH₂=CH—Ph, CH=CH—Ph—O—, R³—Ph—CH=CH—COO—, R³—OOC—CH=CH—Ph—O— and 2-W-epoxyethyl in which

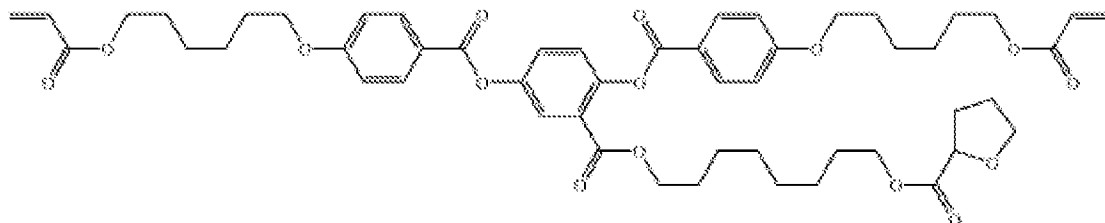
W represents H, Cl, Ph or a lower alkyl,

R³ represents a lower alkyl with the proviso that when R³ is attached to a phenylene group (—Ph—) it may also represent hydrogen or a lower alkoxy.

The reference compound of formula I is compatible with other mesogenic molecular. The reference compound having a low melting point and good alignment properties, which is useful as curable liquid crystals and for preparing liquid crystal films.

The reference compound (shown on page 24 in WO or col. 27 and col. 28 in US '851) below (inherently) anticipates the claimed compound. Also, the first compound on page 19 in WO has melting point 10⁰ C.

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Clp (N-4) 27° C.

The reference compound is the same as the present additive No. 6.

8. The elected species (additive No. 1) is allowed over the prior art.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 10:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kelly Cynthia can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shean C Wu/
Primary Examiner, Art Unit 1795

scw